Continental J. Tropical Medicine 2: 14 - 25, 2008.

REDUCING HIGH MATERNAL MORTALITY IN DEVELOPING COUNTRIES: PROPOSITION FOR ADOPTION OF UNCONVENTIONAL APPROACHES

OFILI Mary Isioma[1], IRINOYE Omolola[2], AKINTOMIDE Anthony[3], ONYESOM, Innocent[4], ADEYEMI Adebanjo Babalola[5].

[1]Department of Nursing Science, Delta State University, Abraka, [2]Department of Nursing Science, Obafemi Awolowo University, Ile-Ife, Nigeria, [3]Department of Medicine Obafemi Awolowo University, Ile-Ife, Nigeria, [4]Department of Medical Biochemistry, Delta State University, Abraka [5]Department of Obstetrics and Gynaecology, Obafemi Awolowo University, Ile-Ife, Nigeria.

ABSTRACT

Pregnancy and child birth are events that occur in the lives of women who are otherwise healthy only that they are fulfilling biological functions for the survival of the human species. Child birth is a physiological phenomenon, not a disease, yet women die in pregnancy and child birth. Of all the health statistics monitored by the World Health Organization, maternal mortality is the one with the largest discrepancy between developed and developing countries. In areas where the problem is greatest, most deaths go unregistered hence, the tendency to underestimate the gravity of the situation. The global objective following the launching of the safe motherhood initiative in Nairobi, Kenya in 1987 to reduce maternal mortality by 50% by the year 2000 has not been actualized. The death of a woman in the prime of her life from a pregnancy related cause that could have been either prevented or treated with simple existing technologies is an unmitigated tragedy. Much could be done to lower this appalling waste of life through these unconventional approaches. The experience in Zaire is a dramatic demonstration of what is possible if one does not follow conventional approaches when they are simply impossible. This report attempts to review the causes of maternal mortality and the impact of conventional approaches to its management. The ameliorating roles of unconventional approaches to the management of maternal mortality is also examined and proposed for adoption.

KEYWORDS: Maternal mortality, Developing Countries, Safe motherhood, Childbirth, Pregnancy

INTRODUCTION

Death is real and inevitable. It occurs at any prime in life even in mothers especially during the period of parturition. Maternal mortality is among the leading causes, if not the leading cause of death among women of reproductive age in most of the developing world (WHO, 1991).

Child birth is a physiological phenomenon, not a disease yet, World Health Organization (WHO, 1991) estimates that half a million women die in pregnancy and child birth each year in developing countries. In the western countries like England, child bearing has largely ceased to be the “death – trap” which it was known to be before the universal recognition and wide acceptance of the benefits of ante-natal care and hospital delivery. However, in the developing countries like Nigeria, where pregnancy is welcomed with a childish glee, its probable outcome is regarded with uncertainty and apprehension and its termination often ending in catastrophe because of poor access and inability to maximally benefit from ante-natal care and hospital delivery.

Of all the health statistics monitored by the World Health Organization, maternal mortality is the one with the largest discrepancy between developed and developing countries. While infant mortality, for example,

is almost seven times higher in developing countries, maternal mortality is on the average 18 times higher (WHO, 1996). In areas where the problem is greatest, most maternal deaths go unregistered. There has therefore, been a tendency to underestimate the gravity of the situation.

In developed countries, the maternal mortality ratio averages around 27 maternal deaths per 100,000 live births; in developing countries, the ratio is nearly 20 times higher, at 480 per 100,000 live births, and may be as high as 1,000 per 100,000 live births in some regions (WHO, 1996).

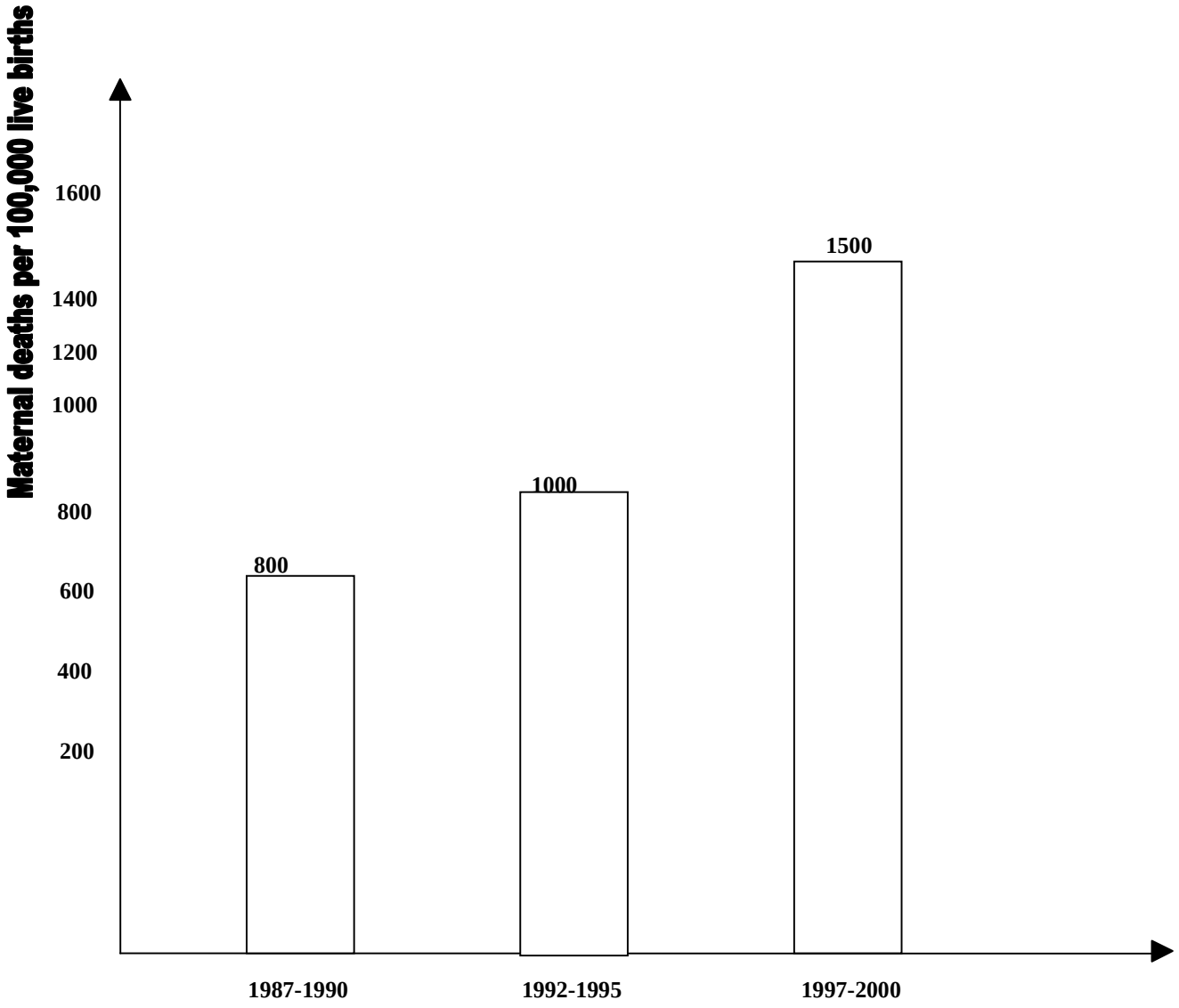

Fig 1.Maternal Mortality Ratio in Nigeria (1987-2000)
Source: WHO/UNICEF, 2001

In parallel to this, for every maternal death in developing countries, as many as 20 to 40 or more women sustain serious, debilitating injuries (WHO, 1996). In Nigeria, maternal mortality estimates, ranged from about 35,000 in 1987 to between 40 to 50,000 in 2000 (WHO/ UNICEF, 2001). Actual figures per 100,000 live births have been provided (Fig.1). Similarly, increasing age is associated with a steep rise in maternal mortality with the lowest seen among the very young (under 18) and the highest in older women (over 35) most particularly among high parity women with 4 or more children (Rosenfield and Maine, 1992).

On 11th February, 1987, the first international Safe Motherhood Conference took place in Nairobi, Kenya, and the goal of a 50% reduction in the 1990 levels of maternal mortality by the year 2000 was formulated giving maternal mortality a high priority. The global objective following the launching of the safe motherhood initiative in Nairobi, Kenya in 1987 to reduce maternal mortality by 50% by the year 2000 may not have been realized.

Instead, every year, higher figures of maternal mortality ratios up from half a million deaths to between 600,000 and one million deaths are being reported and as always, about 99% of these in developing countries (Abou-Zohr, 1997, WHO, 1996). Not least is the fact that maternal mortality in Sub-Saharan Africa is rising than falling as it has done in all other regions of the developing world particularly in the rural areas, where most people live and where modern medical services and personnel generally are not available (Rosenfield and Maine, 1992).

Despite the safe motherhood initiative, a hard evidence demonstrates that much of the good work done have failed to come to fruition hence Rosenfield and Maine, (1997) were justified to ask the question "where is the M in Maternal and Child Health" emphasizing the lack of attention to the persistent high maternal morbidity and mortality rates.

CAUSES OF MATERNAL MORTALITY IN DEVELOPING COUNTRIES

The medical causes of maternal death are remarkably similar throughout the world and the general factors responsible for such death have continued to escalate especially in developing countries, including ours. Some of these contributing factors include the near collapse of supportive socio-economic and political structures leading to increased poverty, ignorance, suffering and non-availability or breakdown of health services (Onwudiegwu, 2000).

Five major common causes of deaths during pregnancy have been identified:

a. Direct and indirect obstetric causes.
b. Reproductive health factors.
c. Socioeconomic/cultural factors.
d. Poor social infrastructure.
e. Health services factor.

a. Direct Obstetric Causes

i. *Hemorrhage:* Globally, some 25% of all maternal deaths are due to hemorrhage (WHO/UNFPA/ UNICEF/World Bank, 1999). Common origins of hemorrhage are ante-partum (placenta praevia and abruptio placentae) and post-partum (primary and secondary from ruptured uterus, uterine atony, cervical lacerations, retained products of conception and others. Hemorrhage is more dangerous when a woman is anemic (WHO/UNFPA/UNICEF/World Bank, 1999). Blood loss can very rapidly lead to death in the absence of prompt and appropriate life saving care which includes the administration of drugs to control bleeding, massage of the uterus to stimulate contractions and blood transfusion if necessary. Very few women with this complication in a rural setting will survive a trip to distant facility (Rosenfield and Maine, 1992).

ii. *Pregnancy-induced hypertension (pre-eclampsia/Eclampsia)*: Particularly, eclampsia (convulsion) is the cause of approximately 12% of all maternal deaths (WHO/UNFPA/UNICEF/World Bank 1999). Deaths from hypertensive disorders can be prevented by careful monitoring during

pregnancy and by treatment with relatively simple anticonvulsant drugs (e.g., magnesium sulphate) in cases of eclampsia. Little can be done for this complication at the rural level other than to recommend bed rest and possibly the use of sedatives (Rosenfield and Maine, 1992). However, prompt transfer to a first referral level facility is also important (Rosenfield and Maine, 1992).

iii. *Obstructed Labour/Prolonged Labour*: This accounts for about 8% of maternal deaths (WHO/UNFPA/UNICEF/World Bank, 1999). It is often caused by cephalo-pelvic disproportion (when the infant's head cannot pass through the maternal pelvis) or by abnormal lie (when the infant is incorrectly positioned for passage through the birth canal) (Brown, *et al*., 1999). Disproportion is more common where malnutrition is endemic, especially among the populations with various traditions and taboos regarding the diet of girls and women and it is worse where girls marry young and are expected to prove their fertility often before they are fully grown (WHO/UNFPA/UNICEF/World Bank, 1999).

iv. *Infection/Sepsis*: This is often a consequence of poor hygiene during delivery or of untreated sexually transmitted diseases (STDs). It accounts for some 15% of maternal deaths (WHO/UNFPA/UNICEF/World Bank, 1999). Such infection can be effectively prevented by careful attention to clean delivery and by detection and management of STDs during pregnancy. Systematic post partum care will ensure rapid detection of infection and its management by appropriate antibiotics.

v. *Complications of Unsafe Abortion*: This is responsible for a substantial proportion (13%) of maternal deaths and is usually carried out by quacks and in unhygienic environments (WHO/UNFPA/UNICEF/World Bank, 1999). The legalization of abortion is the most controversial of all issues within the field of reproductive heath (Rosenfield and Maine, 1992). Abortion contribution to maternal mortality figures is similarly on the increase, no thanks to increased sexual activity among adolescents, low contraceptive usage, restrictive abortion laws and increased activity of quack abortionists and increased rate of clandestine abortions (Onwudiegwu, 2000).

The socio-demographic characteristics of patients who undergo illegal abortion are often similar and are usually students having elementary to high school education, 15 to 24 years of age, single and who have family planning knowledge but do not use any contraceptive method. (Staffan, *et al*., 1993). This indicates that there is a need for preventive action in this vulnerable age group.

Regarding the social context of unwanted pregnancies and induced abortion, Okonofua (1995) in his study noted that the desire to remain in school or to space badly timed pregnancies were frequently mentioned reasons for seeking induced abortions. A substantial proportion of the women became pregnant as a result of failed contraception and a few others mentioned the social unacceptability of the indicated pregnancy. The results of the study suggested that there is a large need for family planning among married and unmarried women and this need have remained unmet as a result of lack of effective use of contraception.

Clearly, there is a need to design or reformulate community based approaches to enable women gain access to contraceptives need for the prevention of unwanted pregnancies and induced abortion in this country (Okonofua, 1995). Where abortion is not prohibited by law, safe abortion care should be maintained.

Indirect Obstetric Causes: Approximately, 20% of maternal deaths are as the result of pre-existing conditions that is exacerbated by pregnancy or its management (WHO/UNFPA/UNICEF/World Bank, 1999). One of the most significant of these indirect causes of death is anemia, other important indirect causes include malaria, hepatitis, heart diseases and increasingly in some settings HIV/AIDS (WHO/UNFPA/UNICEF/World Bank, 1999).

b. Reproductive Health Factors
These include:

i Early onset of child bearing (below 18 years of age). Studies from many countries have shown that young girls are forced to become sexually active at a very early age. (Staffan, *et al.*, 1993). This may lead to difficult labour because of sub-optimal pelvic development.

ii. Too often, inadequate child spacing that is less than 2 years interval. Birth with insufficient spacing may result in malnutrition and anemia.

iii. Too many (more than 5 deliveries) often leading to complications during the pregnancy and at or after delivery.

iv. Too late (late child bearing, at age above 35), often associated with medical and obstetric complications.

c. Socio-Economic/Cultural Factors
Recent studies in Nigeria have shown that harsh economic conditions, subsidy removal and introduction of 'user-fees' in health services have resulted in decreased ante-natal attendances and hospital deliveries. At the same time it increases morbidity and mortality, patronage of quacks and faith clinics and avoidable deaths and complications (Onwudiegwu, 2000). Some of the identified socio-economic factors include:

i. *Ignorance/illiteracy*: Mass illiteracy has been identified as one of the most important factors predisposing women to high maternal mortality in developing countries. Those women who are illiterates are uninformed and often ignorant. They tend to follow traditional beliefs without questioning or reasoning. As a result there is lack of understanding and poor attitude in the utilization of ante-natal and delivery services, family planning, immunization of children and other health education matters. (Staffan, *et al*., 1993).

It is however, important to appreciate that being educated alone is not enough. If one is ignorant about the benefits of ante-natal care, family planning and other health services, one would still be in danger of having one's life shortened, sequel to reproductive health mismanagement.

ii. *Low social status of women*: Women in developing countries have been suppressed for so long. As a result, they are hardly involved in.

iii. *Poor nutrition in childhood and adolescence*: This impairs growth and leads to difficult and traumatic labour and delivery.

iv. *Adverse religious beliefs*: This discourages the use of modern ante-natal and delivery services or rejection of specific modalities such as the use of repeat caesarean section at high risk patients. It also hinders the willingness of the patient, relatives or friends to seek care.

v. *Poverty*: This also discourages the use of health services. The economic structural adjustments policy has necessitated some governments to change from free health services to payment of fees. This has resulted in a decrease in attendance at health institutions because people cannot afford to pay the fees. They therefore report late, with serious complications.

vi. *Lack of accountability*: The lack of accountability and the misappropriation of funds among government officials have led to drainage of huge amounts of money which could have been used on development projects. Favoritisms and nepotism have allowed unqualified persons in certain

vii. positions, and this has brought about mismanagement and lackadaisical attitudes at work places (Staffan, *et al*., 1993).

viii. *Inadequate and uncoordinated research activities*: Approximately 70% of the population of developing countries is made up of women and children. Operational research activities in programmes affecting this vulnerable group are lacking especially in reproductive health. As has been so aptly noted, only until very recently was "MCH" anything but 99% "C" and 1% "M", whilst striving to maintain the level of "C", it is now time to raise the level of enquiry and action about the "M" (Staffan et al, 1993).

b. Poor Social Infrastructure

This includes:

i. Lack/Poor communication facilities: Communication facilities like telephone or radio links could be poor in reaching especially rural set-up.

ii. *General lack of transportation facilities*: Motor vehicles, ambulances and other vehicles to transport patients are scarce in developing countries. As a result, people have to cover long distances to reach a first level referral hospital. Government also seems too happy to say that they have bought ambulances, whilst the question of keeping adequate maintenance services and spending money on spare parts is forgotten. Lack of transport facilities hinders a person's decision to go for medical help when problems arise, a last resort.

c. Health Services Factors

Studies on assessment of obstetric services still show that poor staff attitude continue to contribute to poor use of maternity services and standard facilities by women (Onwudiegwu, 2000). Some of the health services factors are:

- Unavailable/inaccessible modern ante-natal/delivery services.
- Unavailable/inaccessible family planning services.
- Concentration of the medical personnel and hospitals in the larger urban areas.
- Lack of efficient referral services from lower to higher levels of obstetric care.
- Inequitable distribution of health resources.
- Wrong or ineffectual treatment given as a result of wrong diagnoses or poor facilities or incompetent staff.
- Poor staff attitude which may be responsible for the delay to receive care at the health facility.
- Incompetent staff which may not only administer wrong and dangerous treatment but may delay referral of high risk patients thus contributing to morbidity and mortality.
- The socio-economic realities of today's Nigeria no longer encourages humanitarian blood donation, instead commercial blood donors have taken over so that emergency life saving entails prohibitive costs. As a result, there has been lack of organized national blood transfusion services. Although maternal mortality rate is one of the sensitive indices of the quality of health care in any community, the difficulty of measuring it has proved an impediment to progress in alerting health planners and others to the magnitude and causes of this problem and hence to effective interventions on appropriate scale (Chukudebelu, 1988).

A REVIEW OF CONVENTIONAL MEASURES THAT HAVE BEEN ADOPTED TO REDUCE MATERNAL MORTALITY

The priority for world obstetric research should be general communication of scientific insights for preventing maternal death. According to Parker (1977) "the reduction of maternal and fetal mortality from this grave accident is entirely dependent upon its prevention".

Many factors are responsible for achieving the overall reduction in maternal mortality in developing countries during the past twenty-five years as noted by Hawkins and Higgins (1981). Most perhaps are:

a. The development of wide spread training and educational programmes in obstetrics which have provided more and better qualified specialists, professional nurses and other personnel in maternity programmes.

b. Better hospital facilities, improved quality of ante-natal care, multiple safeguards provided in the modern maternity hospitals and advances in therapy have all played major roles.

c. Some changes in attitudes of physicians, nurses and parents also have contributed to this progressive saving of mothers.

d. The development of maternal and child health programmes in the state departments of public health, particularly the work of the community health nurses in maternal hygiene.

e. Education of the public about the values of ante-natal care and advantages of hospital delivery.

f. Increased funding of health services in the urban and rural areas of the nation.

Despite these efforts, maternal mortality rates in the developing countries are still on the increase, hence the need for adoption of unconventional approaches to management.

WHY THE UNCONVENTIONAL APPROACH?

The conventional measures that have been adopted to reduce maternal mortality encountered some problems in its implementation process.

1. The downturn in the economy unfortunately has played havoc with the actual implementation of the budget (in increasing funding of health services). Similarly, the quality of care has decreased due to cuts in health budgets. Many governments in developing countries are in urgent need of providing food and pay less attention to the importance of public health.

It is a sad commentary on the Nigeria health care that a quarter of a century after independence, it was only in 1985 that health allocation in the Nigerian budget rose from less that 2% to 6% thus complying with World Health Organization recommendation for the first time (Chukudebelu, 1988).

2. It is important to stress that mass literacy is what is being advocated not just education of the woman itself and not sexual and reproductive health education only. Where a woman is educated but yet surrounded by illiterates, she may still find herself, in spite of her education, unable to break out of the web of uninformed but strongly held and forcefully expressed opinions in which she is encompassed. Chukudebelu (1988) in his study noted that far too many of the expectant mothers are still keen to deliver on their own and thus prove their womanhood in accordance with native or village traditions and folklores hence the delay in coming to the hospital even when they have previous scars and are booked for a repeat section.

3. There has been increases in family planning services even though helpful but not substantial. This can only be considered marginal in view of the continued low level of contraceptive usage nationally, the unmet need among women and the absent service outlets for needy adolescents (Onwudiegwu, 2000).

4. The inequitable distribution of health resources is still a great problem in many developing countries.

5. Lastly, it is unfortunate that the vast majority of physicians, trained midwives, nurses and hospitals are located in the larger urban areas, with few such resources existing in the rural areas. As a result there has been shortage of both medical and nursing staff in the rural areas.

With the observation that these conventional, perhaps universally acceptable approaches have not successfully reduced maternal mortality, some other approaches which for now may appear unconventional are proposed.

PROPOSAL FOR USE OF SOME UNCONVENTIONAL APPROACHES TO REDUCE MATERNAL MORTALITY IN DEVELOPING COUNTRIES INCLUDING NIGERIA.

Tackling the serious problems of high maternal mortality requires innovativeness as well as a deliberate policy of departure from hackneyed practices and rigid conservatism (Chukudebelu, 1988). However, studies from affluent nations have shown that the dangers of pregnancy can be overcome, although it has proved an expensive exercise. It needs to be emphasized that the government needs to take a lead in setting the stage for the reduction in maternal mortality. This is because government is in the best advantaged position to draw the agenda and set the pace for the people, organizations and establishments to follow. As in many health issues, there must be political will and sustained commitment on the part of the government. On the part of the government:

1. A system could be devised whereby general duty doctors working in rural areas are periodically brought back to hospital departments of obstetrics and gynecology for retraining in basic surgical/obstetric skills like vacuum extraction, forceps delivery and caesarean sections. This scheme could be funded by the Federal Government and International Organizations.

2. Where there is no medical staff, one should consider instructing other personnel in these techniques. There have been calls for the more appropriate use of non-medical personnel for a range of procedures generally not allowed to be performed by them at present, even where there are dramatic shortages of physicians. Experience in Zaire is very important in this regard where because of severe understaffing of physicians, a pioneer missionary physician, Dr. Wallace Thormbloom, trained local nurses to perform caesarean section (emergency surgeons) in the 1950's and later in 1984 their roles expanded to include repair of ruptured uterus, emergency supra cervical hysterectomy, laparatomies for ruptured ectopic pregnancy, symphysiotomy and suction curettage.

   Results revealed that in an 18-month period in 1985 – 1986, these trained nurses performed 310 emergency caesarean sections primarily for obstructed labour, uterine inertia, previous caesarean section and in few cases, for fetal distress, there were only three deaths among these 310 women, a remarkable record. Also three laparatomies for ruptured uteri in which supra-cervical hysterectomies were performed by nurses, this resulted in one death (from septic shock during surgery). It is fair to say that without these procedures, a high proportion of them would have died. Therefore, midwives should be widely trained in the management of life threatening obstetric situations and emergencies, as they are often the only source of help to labouring mothers in many rural communities though this strategy might be expensive.

3. Traditional birth attendants can illustrate the problem of delegation of responsibility. To reduce maternal mortality, it is not enough to just identify and train traditional birth attendants. It is necessary to identify the gaps between what they are presently doing and what they need to improve upon. They should be trained to monitor pregnancy, conduct safe deliveries, and carry out effective procedures like uterine massage and the means to remove a retained placenta. This should be done under supervision with a monitoring team and backed up within a functioning referral system and support from professionally trained health workers.

In many places, the services of skilled professional health care providers are not available and traditional birth attendants (TBAs) may be women's only source of care.

4. It is necessary to improve flow of communication between the health care team, that is, adequate communication (link between TBAs and hospitals) for easy transfer or referral from rural communities to tertiary institutions. Although traditional birth attendants (TBAs) can provide culturally appropriate nurturing in the community setting, they could also offer a first-line link with the formal health care system if assisted to increase their ability and provide simple services such as the distribution of nutrition supplements.

   A useful strategy in a range of settings has been to train TBAs to recognize problems during delivery and, when necessary to guide women to and through the formal health care system with the aid of a good communication system.

5. Planning and strengthening referral and transfer (alert and transport systems) is essential. Agreements must be reached on how principal health workers and TBAs will communicate with the referral center. Alternative communication systems should be planned in case of failure of one method. Where communication is a problem, the assistance of agencies like the police, or either radio or telephone systems should be formally arranged by the health administration of the area. Transport should be planned in anticipation of emergencies, communities might be encouraged to identify their transport resources and agree on how costs could be borne.

6. Recognition of the emergency/sensitive nature of maternity services so that separate ambulance services and such others that will improve response to emergency care are provided.

   The National Safe Motherhood health programmes should be action-oriented and implemented in the context of broader health programmes, with emphasis on actions for improving the health of young and adolescent females, the mothers of the future. These would include the need to improve the nutrition of female children, nutritional advice and micronutrient supplementation, the prevention of early marriage and supporting education for girls, child survival and development, immunization, safe water and sanitation, family planning, the avoidance of unwanted pregnancies and the prevention and control of malaria, HIV/AIDS and other sexually transmitted diseases.

7. A diet that provides sufficient calories and micronutrients is essential for a pregnancy to be successfully carried to term. Adequate provision of these food crops should be made available in the rural setting and the community being incorporated to make use of those food crops. Supplementation and/or fortification can help where micronutrient deficiencies are endemic and where there are food shortages as a result of seasonal fluctuations or agricultural crises. Also community education efforts is essential to reverse wide spread beliefs and practices that militate against adequate nutrition for pregnant women and to raise awareness that preparation for successful pregnancy and child birth begins well before adulthood, with adequate nutrition for girls.

8. Encouragement and promotion of compulsory free female education up to secondary school level. This will enhance the quality of life and ability to understand and utilize maximally available maternal services for their good and that of their offspring. Such a system will ensure that there is no discrimination against girls in preference to boys for schooling. Not only will it postpone the age of first marriage, it will also make girls more receptive to the message regarding contraception, reproductive biology and safe motherhood and STDs.

9. Innovative antenatal health education for prospective mothers. This buttresses the importance of basic education. The introduction of health education including sex education should be incorporated into the curricula of schools. Parents should change their attitudes towards sex

10. education of their children. Sex education should also be included and made compulsory in the pre-marital counseling classes that should also be held throughout the country. This should be encouraged so that health services including family planning services can be expanded to both urban and rural areas that are widened for greater coverage, available without restriction and devising family planning programs that cater for adolescents. We cannot and ought not to prevent the first pregnancy but we can and should surely prevent the 6^{th} or 8^{th} pregnancy.

11. Pregnant women need not to have barriers to quality ante-natal care, whether physical, financial or social need. Cheap or free ante-natal and delivery services should be provided for most of the women who are poor.

12. Women status needs to be improved; this can only be carried out with the full participation of the women concerned. They have to express their own ideas about what their needs, are, and decide on the best way to meet them. This can be more difficult than it sounds, especially in countries where women are not accustomed to speaking up. This may take time, but with support and much patience, it will be achieved. Women, for instance, could have a voice of decisions about working conditions, maternity leave, child care, retirement benefits and equal voting rights.

13. Provision of a permanent senior trained midwife in the obstetric hospitals in a community/area to be the overseer of all the maternal care in that community.

14. Strengthening of primary level family and maternal services which include innovative schemes such as maternal waiting homes situated adjacent to a hospital where women identified to be high risk are housed and kept closer to a hospital or health centre to await the onset of labour.

15. Life threatening medical / obstetric conditions should first be attended to before consideration and insistence on fee payments.

16. There should be organized and compulsory continued medical education for all cadres of staff involved in maternity care services through workshops, seminars and conferences.

17. Work ethics (staff attitude) need to be improved upon so as to encourage women to use ante-natal services. The goal should be consumer-friendly service.

18. The health budget must be reviewed upwards to at least 5% of the national budget as recommended by WHO. Presently, the Nigerian health budget has been in the region of 2.5% of the national budget.

19. Judicious use of funds for the purposes they are meant for and with the government showing sincere commitment to the ideals of the safe motherhood initiative.

20. Implementation of the essential obstetrics care as outlined by the WHO of which the establishment of the National Blood transfusion services is a function and should be accomplished.

21. Research activities, especially in maternal health, should be intensified. Data from research will assist in planning maternal health activities; it will also help in monitoring and evaluating interventions.

CONCLUSION AND RECOMMENDATION

Pregnancy and child birth are events that occur in the lives of women who are otherwise healthy only that they are fulfilling biological functions for the survival of the human species.

It will amount to gender insensitivity and unappreciation for this unique but tasking role, if control of political power and resources in the hands of men are withheld while women die prematurely performing their natural roles for the survival of mankind.

The death of a woman in the prime of her life from a pregnancy related cause that could have been either prevented or treated with simple existing technologies is an unmitigated tragedy.

No obstetrician or midwife can have an easy conscience until all women have the opportunity to enjoy a healthy pregnancy and a safe delivery.

Much could be done to lower this appalling waste of life through these unconventional approaches. The experience in Zaire is a dramatic demonstration of what is possible if one does not follow conventional approaches when they are simply impossible. It is hoped that the obstetricians and other medical administrators working in the developing countries will be able to apply the principles in a manner consonant with their culture.

A society deprived of the contribution made by women is one that will see its social and economic life decline, its culture impoverished and its potential for development severely limited. The world will be a dry and impossible one without them.

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Received for Publication: 12/06/2008
Accepted for Publication: 29/10/2008

Corresponding Author:
MARY ISIOMA OFILI
Postal address: P.O. Box 212, Abraka, Nigeria
E-mail: isiomamary@yahoo.com